INSTRUCTION MANUAL

CLIMAGUARD™ Heat Exchangers

TX23, TX33, TX38, TX52

McLean® COOLING TECHNOLOGY

Protecting Electronics. Exceeding Expectations.™

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Pentair Technical Products

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NOTE: Some of the information in this manual may not apply if a special unit was ordered. If additional drawings for a special unit are necessary, they have been inserted. Contact Pentair Technical Products if further information is required.

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RECEIVING THE AIR CONDITIONER

Inspect the Heat Exchanger. Check for concealed damage that may have occurred during shipment. Look for dents, scratches, loose assemblies, etc. Damage evident upon receipt should be noted on the freight bill. Damage should be brought to the attention of the delivering carrier -- NOT to McLean Thermal -- within 15 days of delivery. Save the carton and packing material and request an inspection. Then file a claim with the delivering carrier.

Pentair Technical Products cannot accept responsibility for freight damages; however, we will assist you in any way possible.

TESTING THE HEAT EXCHANGER

TEST FOR FUNCTIONALITY BEFORE MOUNTING THE HEAT EXCHANGER TO THE ENCLOSURE.

Refer to nameplate for proper electrical current requirements, and then connect power cord to a properly grounded power supply. Minimum circuit ampacity should be at least 125% of the amperage shown in the design data section for the appropriate model. No other equipment should be connected to this circuit to prevent overloading.

Operate the heat exchanger for several minutes. No excessive noise or vibration should be evident during this run period. Ambient air mover may not be energized at temperatures low enough to not require cooling. On DC powered units, air movers may not always be running at full speed.

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INSTALLATION INSTRUCTIONS

1. Inspect heat exchanger. Verify functionality before mounting the heat exchanger, see TESTING THE HEAT EXCHANGER on page 3.
2. Determine if the unit is to be surface or recess mounted. Using the appropriate cutout dimensions shown in this manual, prepare the enclosure opening for either surface or recess mounting.
3. Using the gasket kit provided, install gaskets to heat exchanger.
4. Mount heat exchanger on enclosure using mounting screws provided. Torque screws to 25 in-lbs (2.82 Nm).
5. Refer to unit nameplate for electrical requirements. Connect the power cord to a properly grounded power supply. Use of an extension cord is not recommended. Electrical circuit should be fused with slow blow or HACR circuit breaker.

PRINCIPLES OF OPERATION

Operating the heat exchanger below the minimum ambient temperature or above the maximum ambient temperatures indicated on the nameplate voids all warranties.

It is recommended that the warranty section of this manual be read in order to familiarize yourself with parameters of restricted operation.

MAINTENANCE

Air Movers

Air mover motors require no maintenance. All bearings are lubricated during manufacturing for the life of the motor.

If the ambient air mover should fail, it is not necessary to remove the heat exchanger from the cabinet or enclosure to replace it. The ambient air mover is mounted on a bulkhead and is easily accessible by removing the front cover.

Caution! Operation of the heat exchanger in areas containing airborne caustics or chemicals can rapidly deteriorate aluminum cores and air movers. Contact Pentair Technical Products for special recommendations.

Ambient Air In/Out Screens

In dirty environments, the bug screens on the front cover may need to be cleaned periodically to maintain adequate cooling performance. The front cover should be removed from the heat exchanger and set aside for cleaning with water, air or scrubbed clean with a brush.

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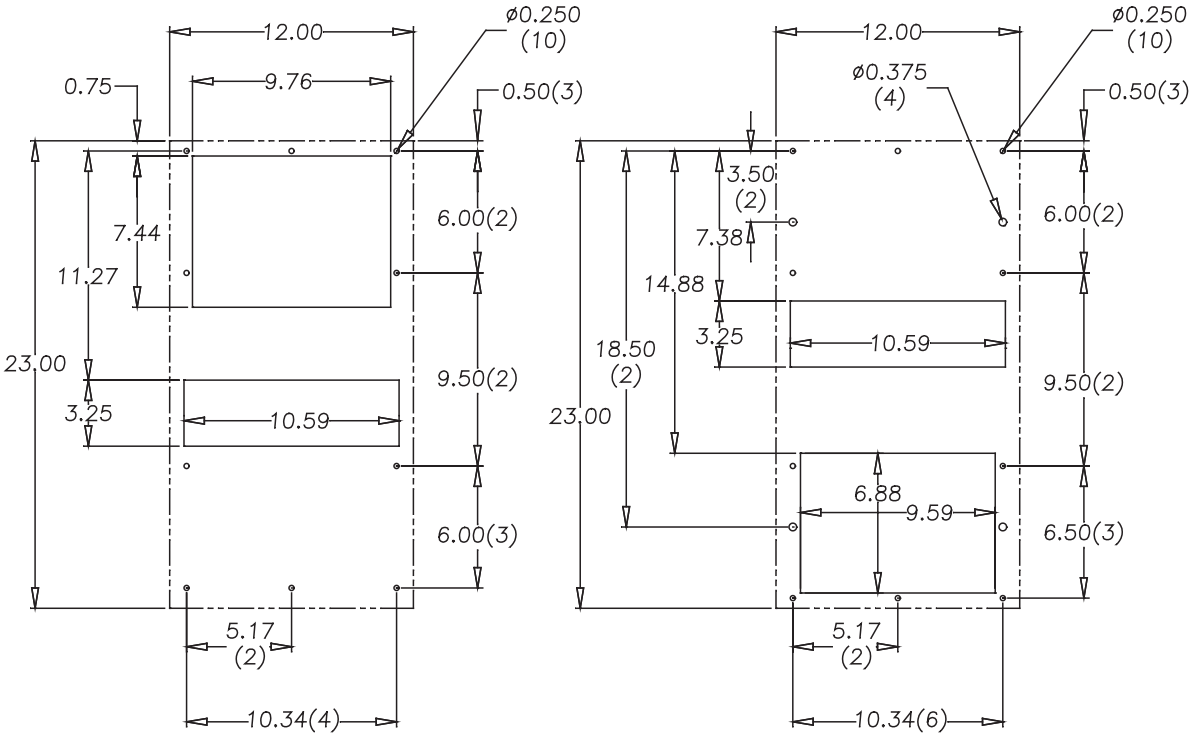
TX23 Series
25 Watts/°C (14 Watts/°F)

Model	Voltage	Hz	Full Load Amps	Phase	Maximum Temperature (°C/°F)	Minimum Temperature (°C/°F)	Shipping Weight (lb./kg)
TX23-1424-XXX	24VDC		3.4		65/149	-40/-40	30/13.6
TX23-1448-XXX	48VDC		1.8		65/149	-40/-40	30/13.6
TX23-1416-XXX	115VAC	50/60	TBD	1	65/149	-40/-40	30/13.6
TX23-1426-XXX	230VAC	50/60	TBD	1	65/149	-40/-40	30/13.6

XXX will be replaced with a three-digit number designating all desired options. Consult the factory for specific model numbers.

TX23 Mounting Cutout Dimensions



External Mounting Internal Mounting

CUTOUT INSTRUCTIONS
(As viewed from outside of enclosure)

NOTE: Dashed lines represent heat exchanger.

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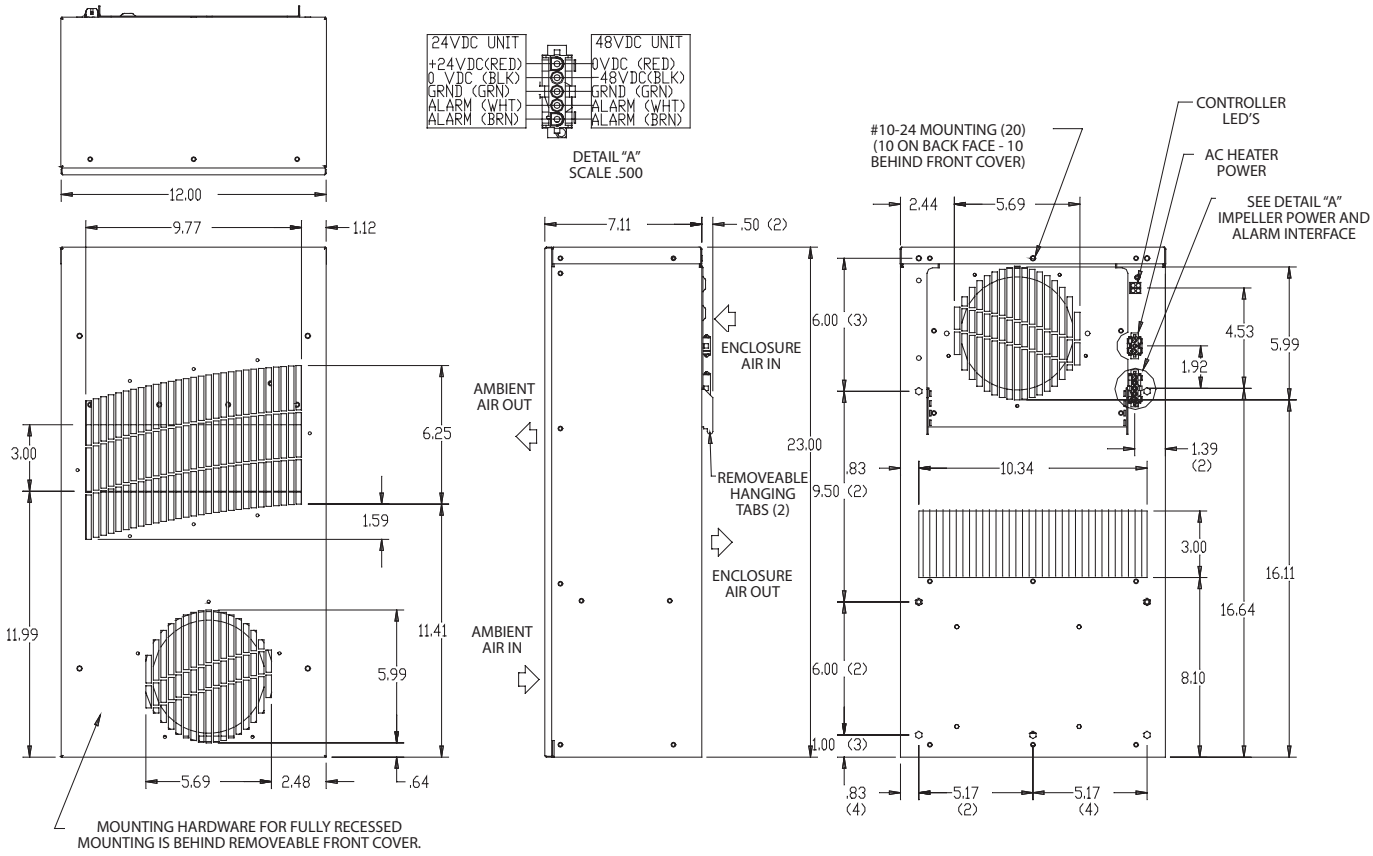
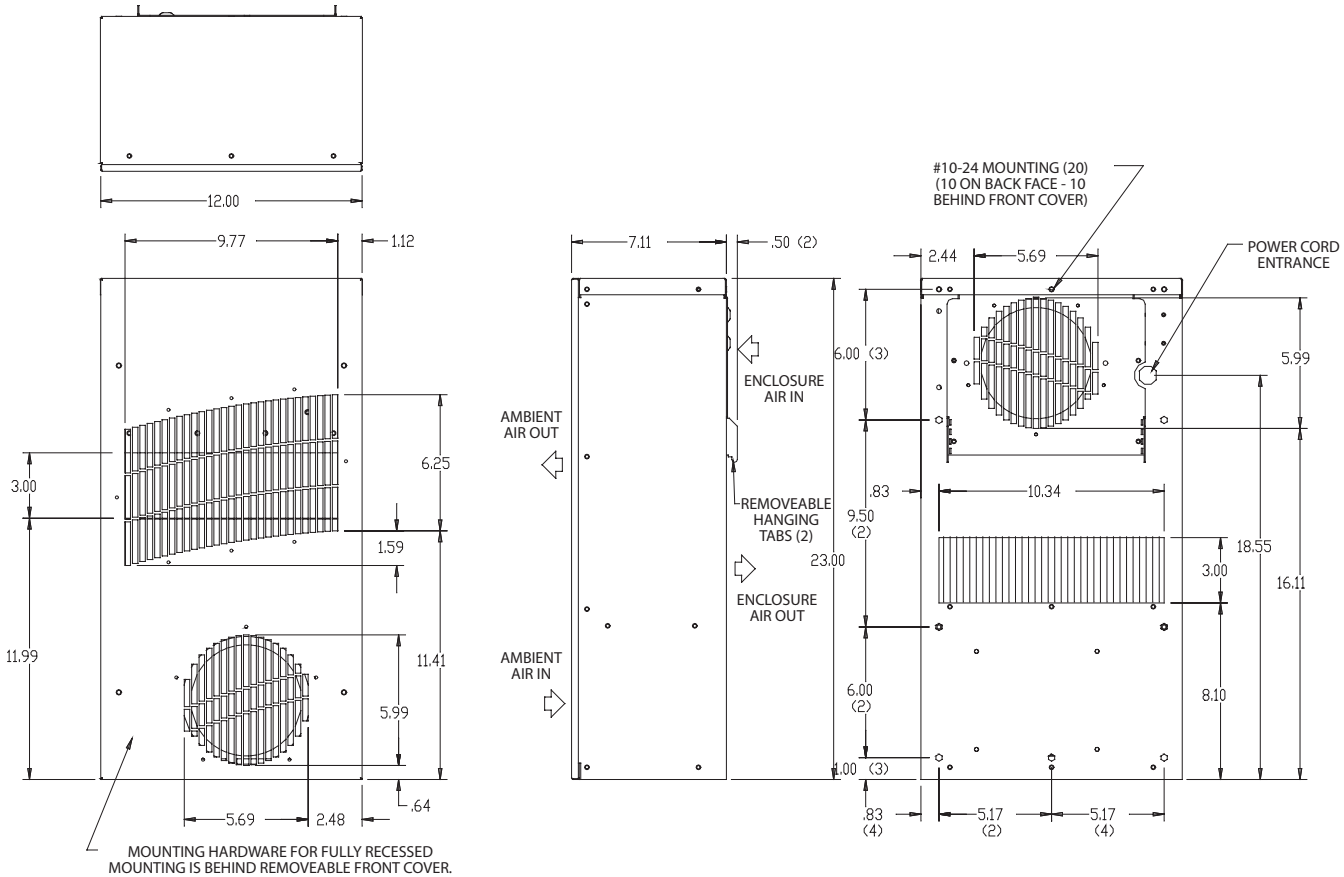
TX23 DC Model Drawing



TX23 AC Model Drawing



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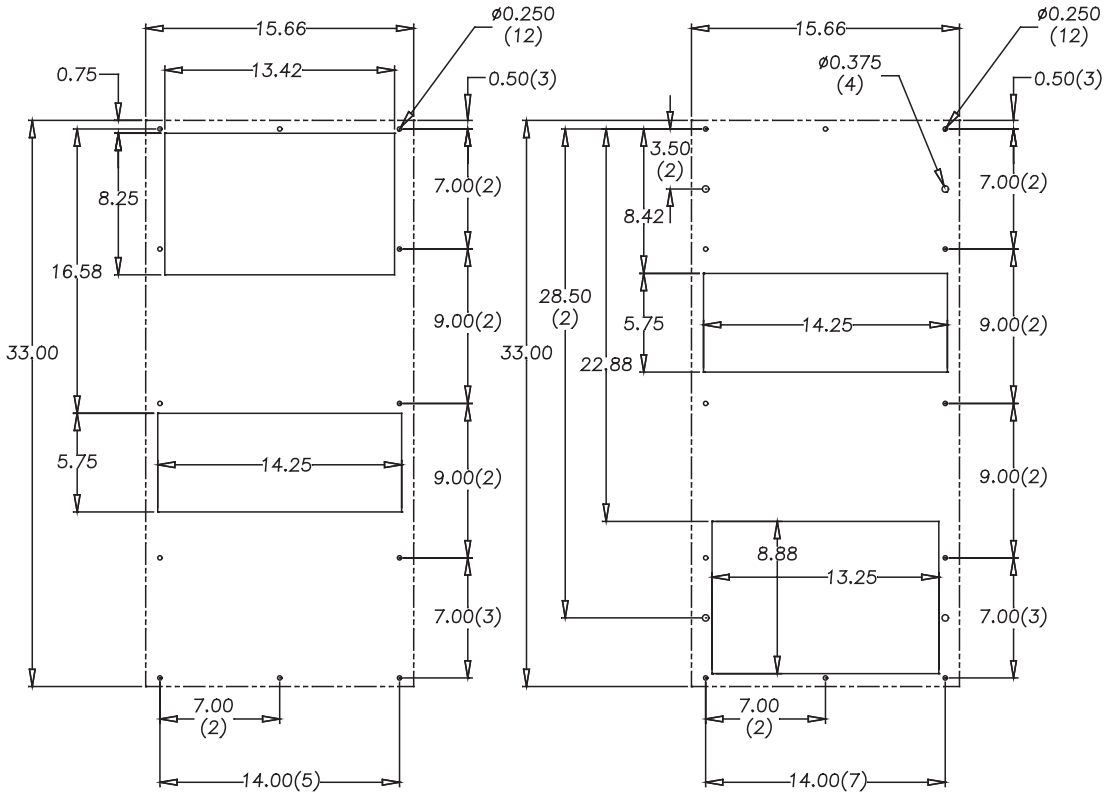
TX33 Series
50 Watts/°C (28 Watts/°F)

Model	Voltage	Hz	Full Load Amps	Phase	Maximum Temperature (°C/°F)	Minimum Temperature (°C/°F)	Shipping Weight (lb./kg)
TX33-2824-XXX	24VDC		3.4		65/149	-40/-40	45/20.4
TX33-2848-XXX	48VDC		1.8		65/149	-40/-40	45/20.4
TX33-2816-XXX	115VAC	50/60	TBD	1	65/149	-40/-40	45/20.4
TX33-2826-XXX	230VAC	50/60	TBD	1	65/149	-40/-40	45/20.4

XXX will be replaced with a three-digit number designating all desired options. Consult the factory for specific model numbers.

TX33 Mounting Cutout Dimensions



External Mounting Internal Mounting

CUTOUT INSTRUCTIONS
(As viewed from outside of enclosure)

NOTE: Dashed lines represent heat exchanger.

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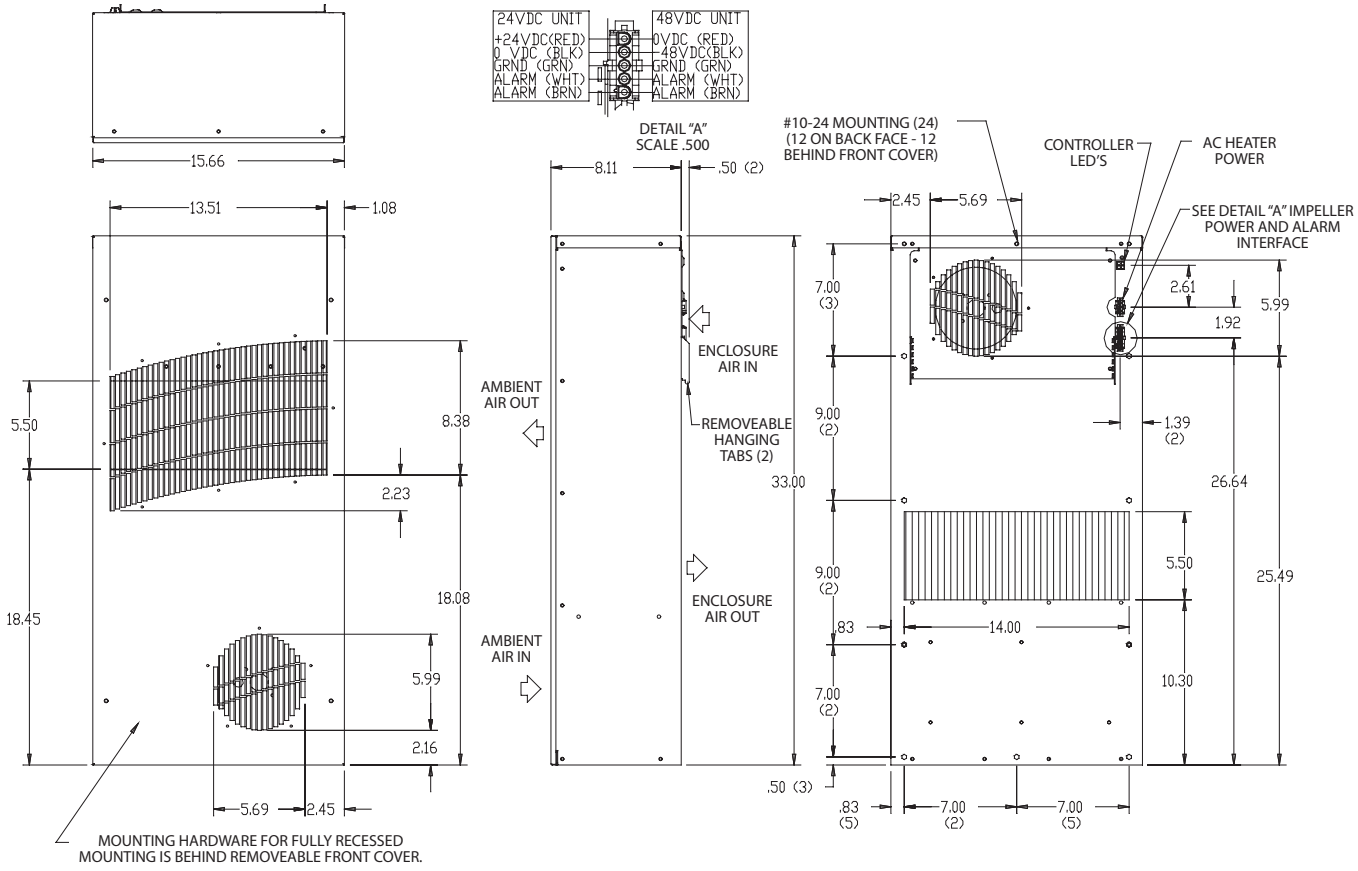
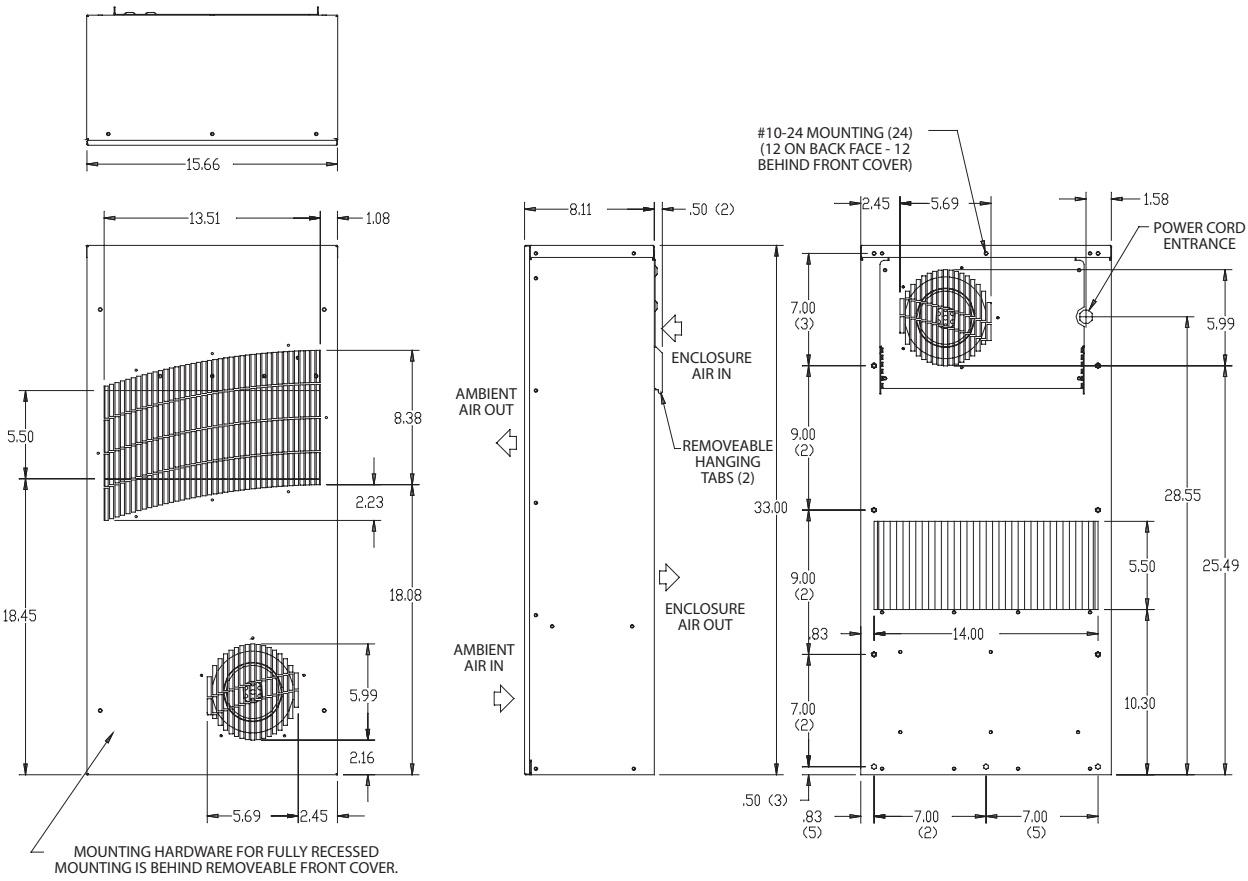
TX33 DC Model Drawing



TX33 AC Model Drawing



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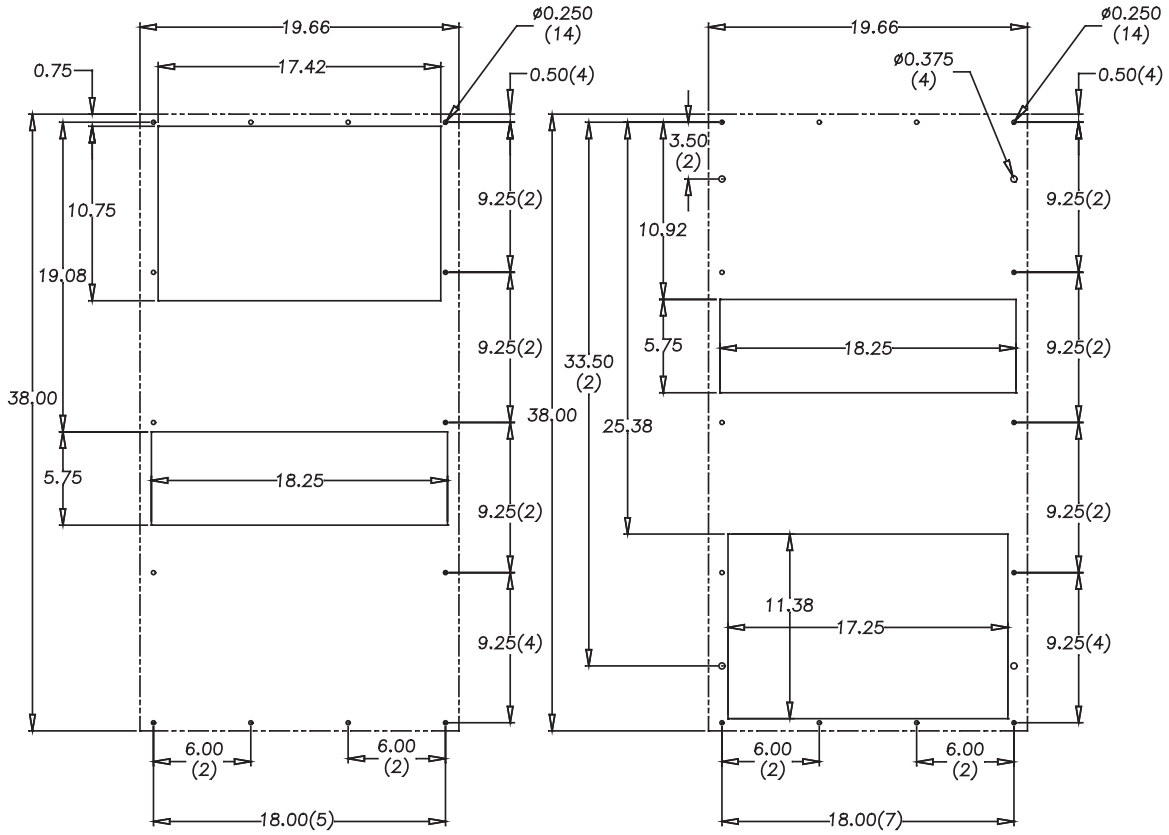
TX38 Series

100 Watts/°C (56 Watts/°F)

Model	Voltage	Hz	Full Load Amps	Phase	Maximum Temperature (°C/°F)	Minimum Temperature (°C/°F)	Shipping Weight (lb./kg)
TX38-5624-XXX	24VDC		8.6		65/149	-40/-40	66/30
TX38-5648-XXX	48VDC		5.8		65/149	-40/-40	66/30
TX38-5616-XXX	115VAC	50/60	TBD	1	65/149	-40/-40	66/30
TX38-5626-XXX	230VAC	50/60	TBD	1	65/149	-40/-40	66/30

XXX will be replaced with a three-digit number designating all desired options. Consult the factory for specific model numbers.

TX38 Mounting Cutout Dimensions



CUTOUT INSTRUCTIONS
(As viewed from outside of enclosure)

NOTE: Dashed lines represent heat exchanger.

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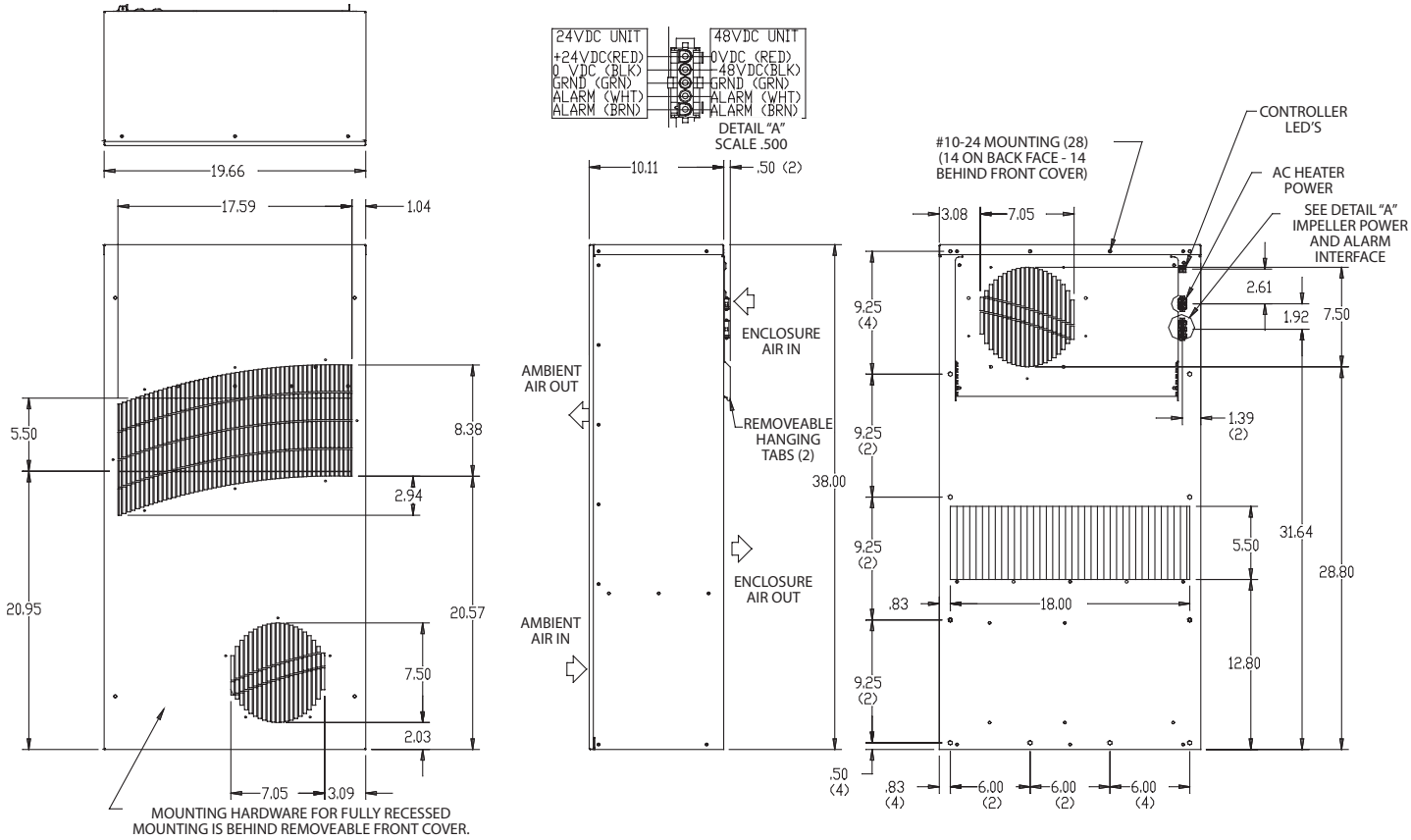
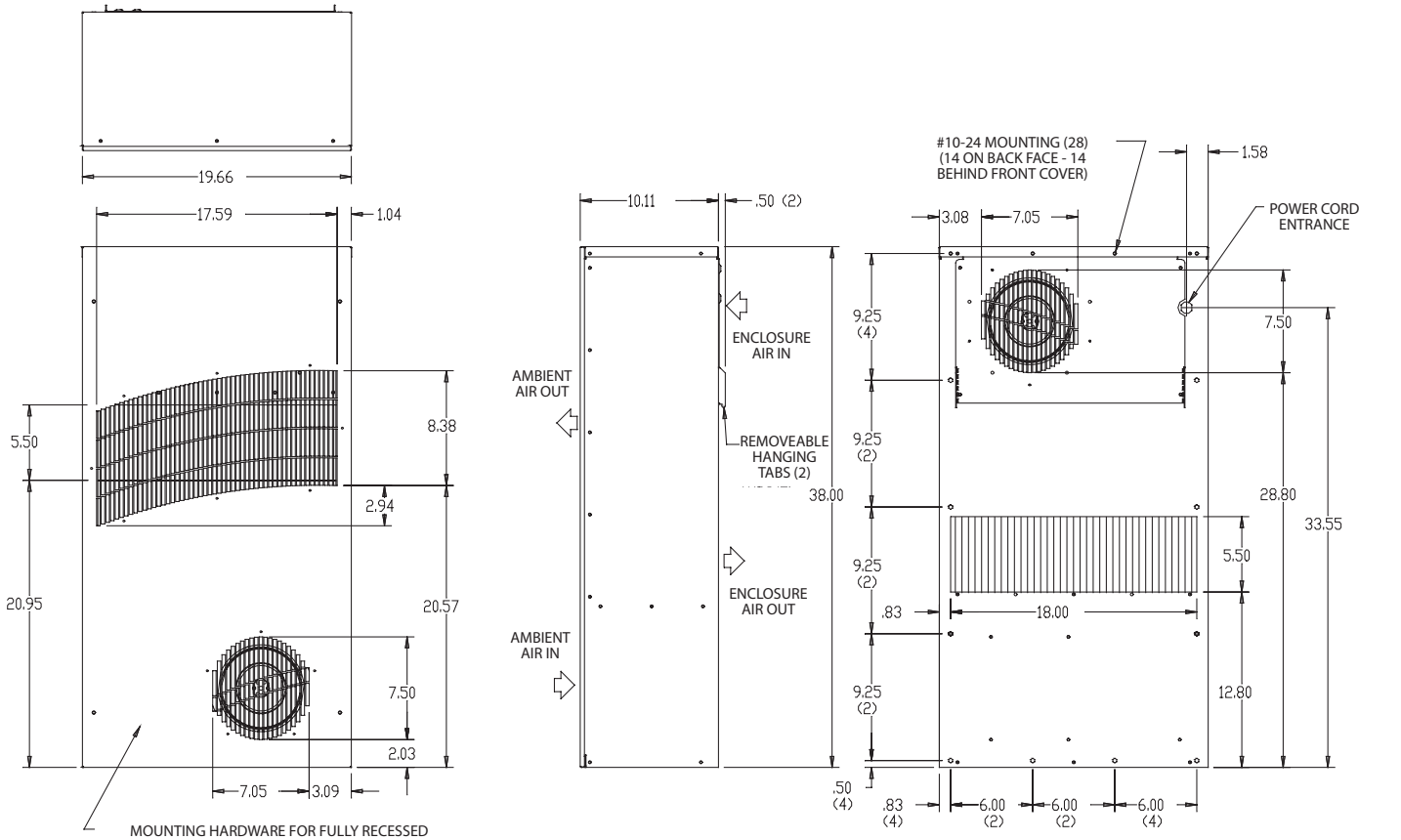
TX38 DC Model Drawing



TX38 AC Model Drawing



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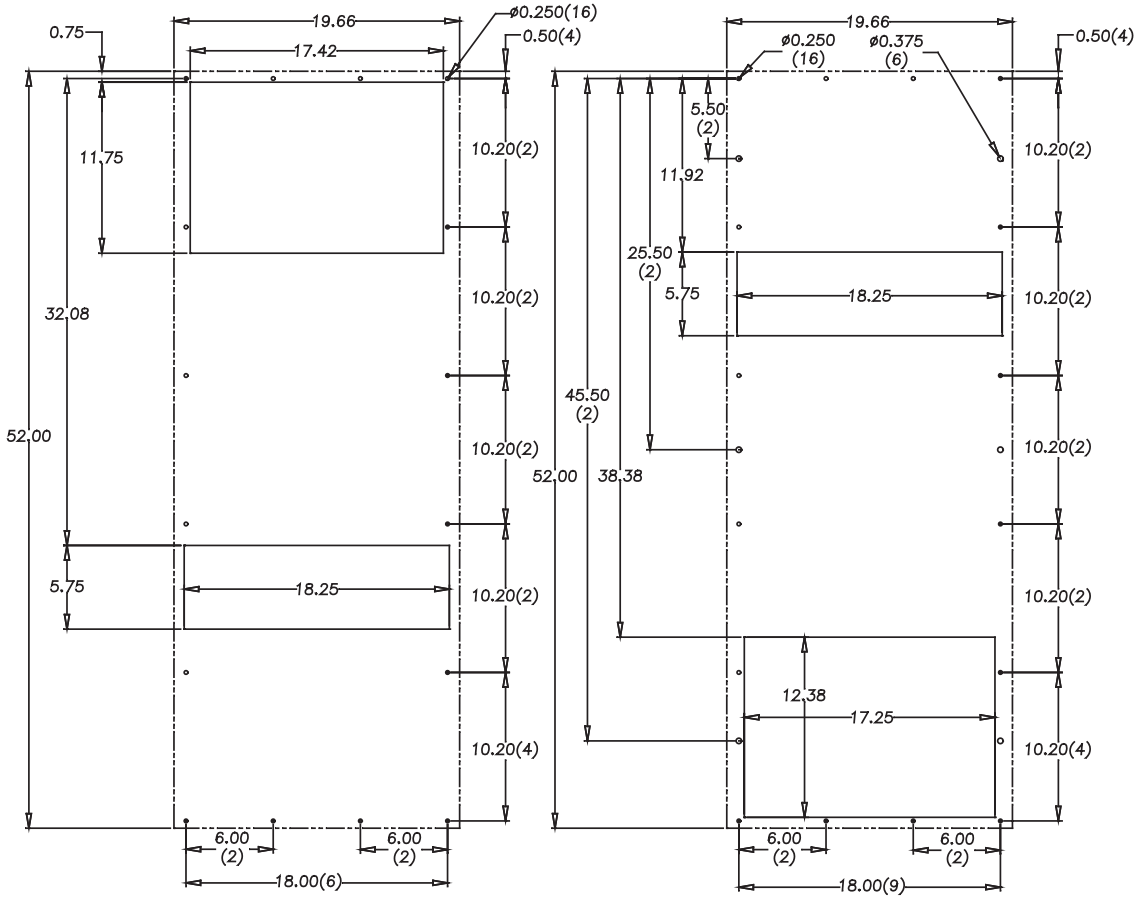
TX52 Series

150 Watts/°C (83 Watts/°F)

Model	Voltage	Hz	Full Load Amps	Phase	Maximum Temperature (°C/°F)	Minimum Temperature (°C/°F)	Shipping Weight (lb./kg)
TX52-8324-XXX	24VDC		21.1		65/149	-40/-40	100/45.3
TX52-8348-XXX	48VDC		7.8		65/149	-40/-40	100/45.3
TX52-8316-XXX	115VAC	50/60	4.3/6.7	1	65/149	-40/-40	100/45.3
TX52-8326-XXX	230VAC	50/60	2.2/3.4	1	65/149	-40/-40	100/45.3

XXX will be replaced with a three-digit number designating all desired options. Consult the factory for specific model numbers.

TX52 Mounting Cutout Dimensions



External Mounting Internal Mounting

CUTOUT INSTRUCTIONS
(As viewed from outside of enclosure)

NOTE: Dashed lines represent heat exchanger.

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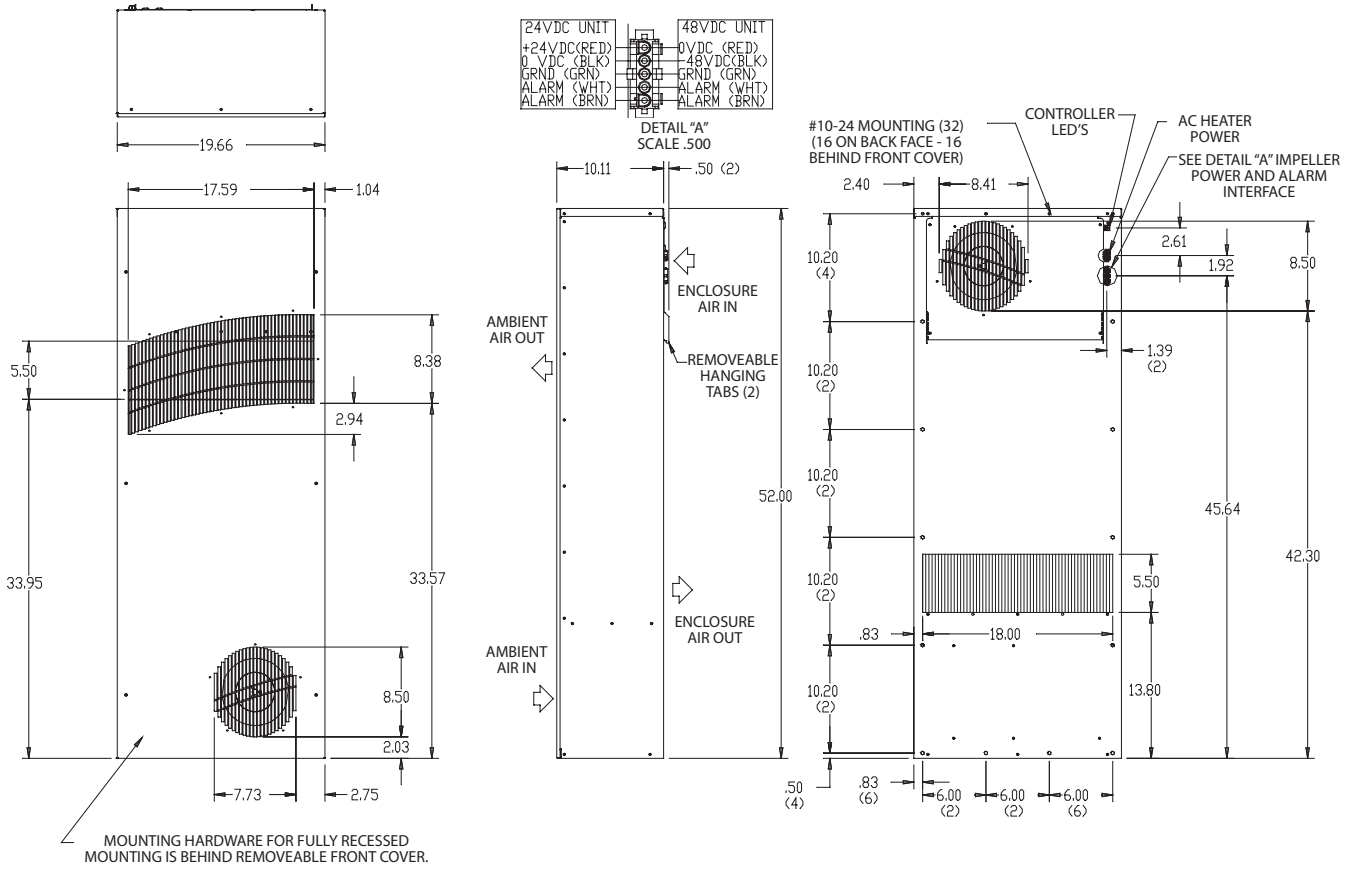
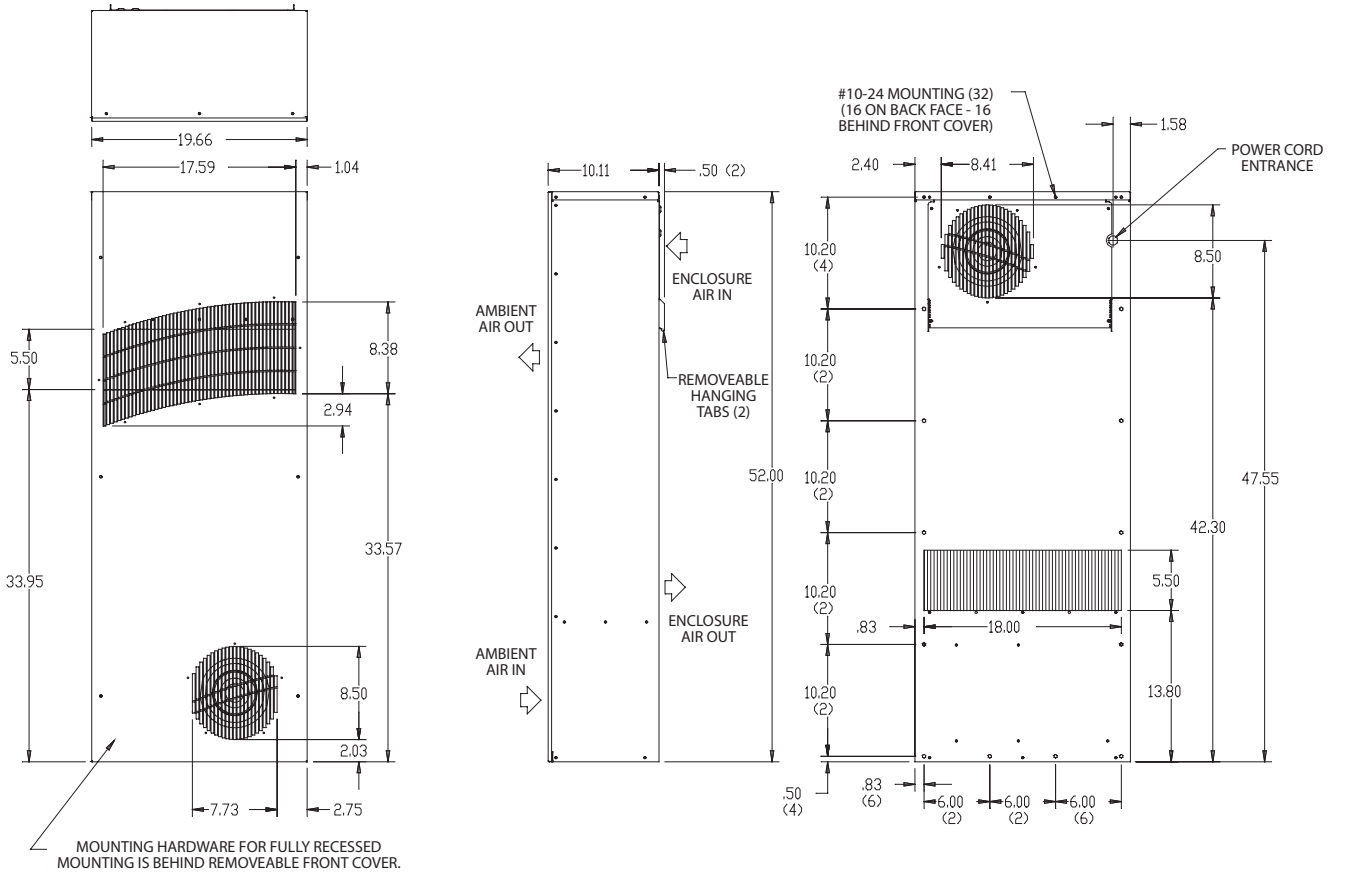
TX52 DC Model Drawing



TX52 AC Model Drawing



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TX23 Components List

Part Description	Part Number			
	24VDC	48VDC	115VAC	230VAC
Air Movers	10-1091-64	10-1091-55	12-1012-01	12-1012-02
Controller, Generic (may vary w/options)	E117E004	E117E004	NA	NA
Thermostat	NA	NA	10-1061-16	10-1061-16
Service Cord / Harness	09-3001-89	09-3001-89	52-6035-138	52-6035-139

TX33 Components List

Part Description	Part Number			
	24VDC	48VDC	115VAC	230VAC
Air Movers	10-1091-64	10-1091-55	10-1091-130	10-1091-131
Controller, Generic (may vary w/options)	E117E004	E117E004	NA	NA
Thermostat	NA	NA	10-1061-16	10-1061-16
Capacitors	NA	NA	S-1353-1	52-6084-02
Service Cord / Harness	09-3001-89	09-3001-89	52-6035-138	52-6035-139

TX38 Components List

Part Description	Part Number			
	24VDC	48VDC	115VAC	230VAC
Air Movers	10-1091-12	10-1091-109	10-1091-132	10-1091-133
Controller, Generic (may vary w/options)	E117E000	E117E000	NA	NA
Thermostat	NA	NA	10-1061-16	10-1061-16
Capacitors	NA	NA	52-6031-03	52-6084-05
Service Cord / Harness	09-3001-89	09-3001-89	52-6035-138	52-6035-139

TX52 Components List

Part Description	Part Number			
	24VDC	48VDC	115VAC	230VAC
Air Movers	10-1091-125	10-1091-126	10-1091-134	10-1091-135
Controller, Generic (may vary w/options)	E117E002	E117E006	NA	NA
Thermostat	NA	NA	10-1061-16	10-1061-16
Capacitors	NA	NA	52-6031-03	52-6084-05
Service Cord / Harness	09-3001-96	09-3001-89	52-6035-138	52-6035-139

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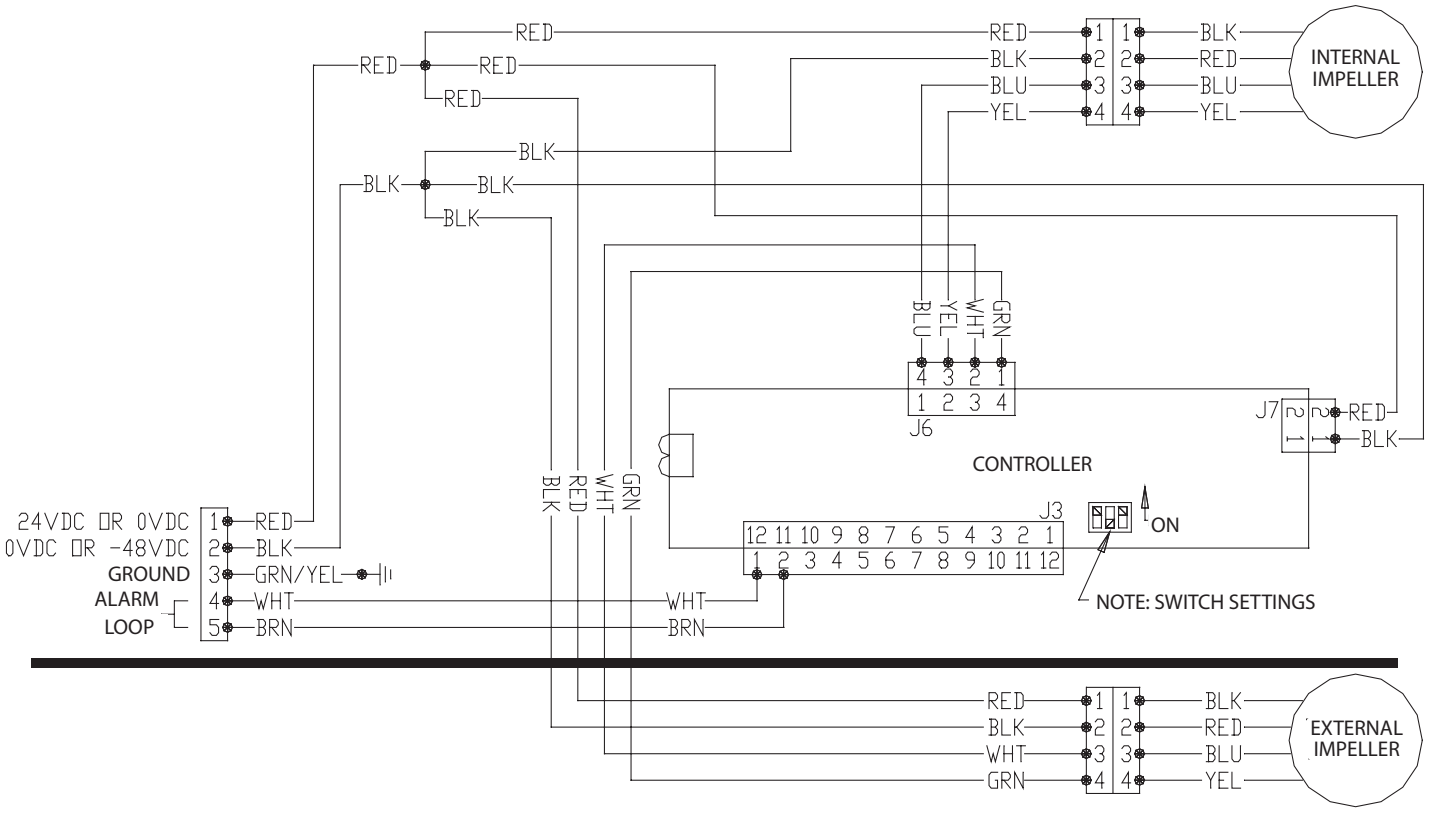
TX DC Wire Diagram (see label on unit for actual options)



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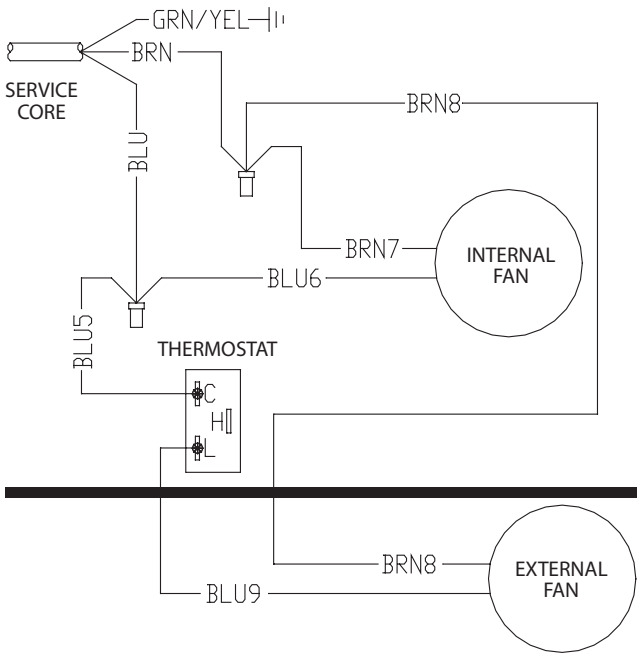
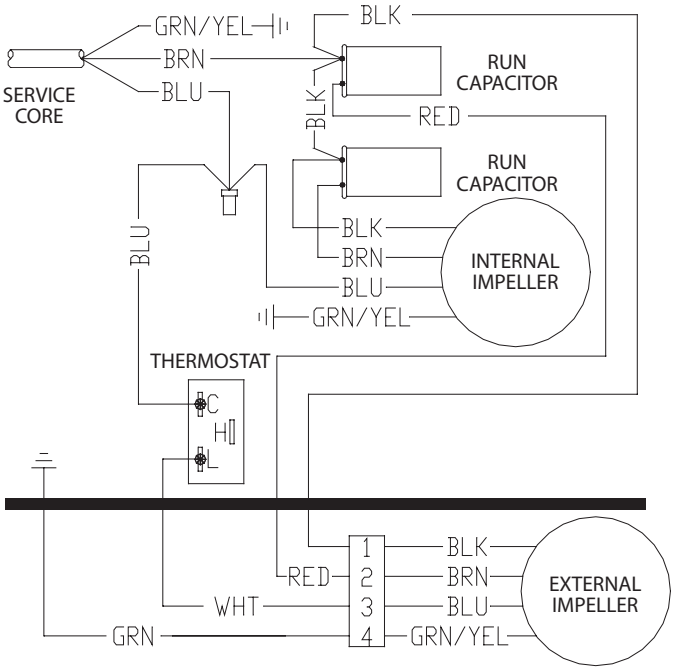
TX23 AC Wire Diagram (see label on unit for actual options)



TX33, TX38, TX52 AC Wire Diagram (see label on unit for actual options)



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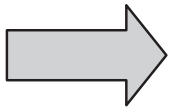
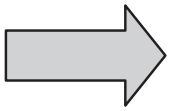
TROUBLE SHOOTING AC Units

Basic Trouble Shooting Check List

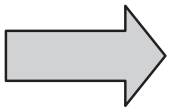
1. Check manufacturer's nameplate located on the unit for correct power supply.
2. Unit blows fuses or breakers.

• Under sized fuse/breaker or not time delayed • Short in system		**Repair or Replace defective part**

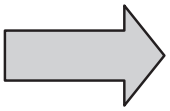
3. Turn on power to the unit. The enclosure air mover should come on. Is there airflow?

YES, proceed to step 4.		
NO, possible problem:		
• Open motor winding • Stuck air mover motor • Obstructed wheels/blades		**Repair or Replace defective part**

4. Check thermostat setting? Adjust thermostat to the lowest setting. This should turn both air movers on. Did both air movers come on when the thermostat was turned down?

YES, proceed to step 5.		
NO, possible problem:		
• Defective thermostat		**Replace part**

5. Are both air movers running? If not, the unit will not cool properly.
6. Check ambient air mover for airflow. Is there airflow?

YES, proceed to step 7.		
NO, possible problem:		
• Defective thermostat • Open motor winding • Stuck air mover motor • Obstructed wheels/blades		**Repair or Replace defective part**

7. To check for a bad thermostat, turn off power to the unit. Remove access cover and place both thermostat wires onto one terminal (replace access cover for safety). This will bypass the switch in the thermostat. Turn on power to the unit and if both air movers come on, the thermostat needs to be replaced.

For additional technical information (i.e., amp draw, temperatures) , contact Pentair Technical Products at 800-896-2665.

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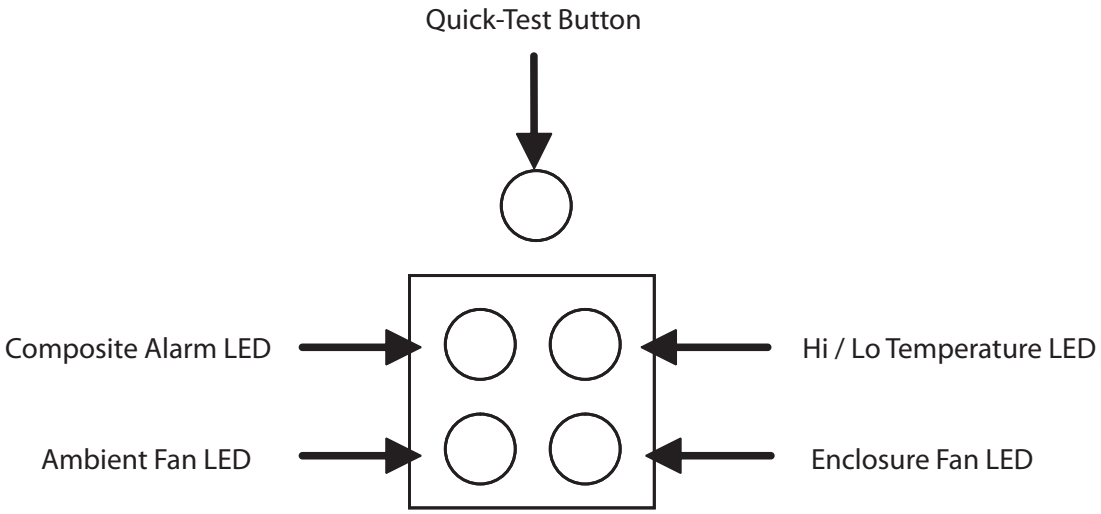
TROUBLE SHOOTING DC Units

Basic Trouble Shooting Check List

1. Check manufacturer's nameplate located on the unit for correct power supply.
2. Unit blows fuses or breakers.

• Under sized fuse/breaker or not time delayed • Short in system	→	**Repair or Replace defective part**

3. Turn on power to the unit.
4. Press the Quick-Test button (located above the LED's on the enclosure side of the unit). The unit will cycle through a series of self-diagnostic tests to verify proper operation of components.



5. Do all LED's clear to GREEN following the self test? RED indicates a fault.

YES, unit is working properly.				
NO, identify which alarm is activated: Note the Composite Alarm LED will also light if any other alarm activates.				
• Ambient air mover OR Enclosure air mover	→	• Open motor winding • Stuck air mover motor • Obstructed blades	→	**Repair or Replace defective part**
• Hi / Lo Temperature	→	• If the enclosure temperature is outside the nameplate temperature range, the Hi / Lo Temperature alarm will activate.		
• Composite Alarm Only	→	• Controller Temperature Sensor Failure		**Repair or Replace defective part**

For additional technical information (i.e., amp draw, temperatures) , contact Pentair Technical Products at 800-896-2665.

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WARRANTY

Pentair Technical Products warrants that the Goods manufactured by Pentair Technical Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment by Pentair Technical Products, subject to the following conditions and exclusions:

A. Conditions. All Goods must be installed and operated according to the following specifications:

1. Maximum voltage variation no greater than plus or minus 10% of nameplate nominal rating;
2. Maximum frequency variation no greater than plus or minus 3 Hz. of nameplate nominal rating;
3. Must not exceed minimum and maximum stated temperatures on the nameplate;
4. Must not exceed (BTU/Hr) rating, including any heat sink as indicated on the nameplate;
5. Refrigerant bearing Goods must not be restarted for a period of one (1) minute after intentional or accidental shut-off;
6. The filters (if applicable) must be cleaned regularly;
7. The Goods and any parts thereof must not be modified, unless prior written authorization is received from Pentair Technical Products; and
8. All Goods must be installed and grounded in accordance with all relevant electrical and safety codes, as well as the National Electric Code and OSHA rules and regulations.
9. All Goods must be installed in a stationery application, free of vibration.

A violation of any one of these conditions shall render the warranty hereunder void and of no effect.

B. Exclusions. This warranty shall be void if product is misapplied in any way or:

1. Buyer specified product is inappropriate for system or environment in which it is operating.
2. Pentair Technical Products product modified in any way without prior written authorization from Pentair Technical Products.
3. Removal or modification of Pentair Technical Products label affixed to product without written Pentair Technical Products approval.

Pentair Technical Products must be notified of a claim in writing not later than fourteen (14) days from the date when Buyer has become aware of such occurrence, or where the defect is such that it may cause damage, immediately, such notice containing a description of how the defect manifests itself. Failure to provide such prompt notice to Pentair Technical Products shall result in forfeiture of Buyer's rights under this warranty.

In the event of a warranty claim, Buyer is to return defective goods to Pentair Technical Products in accordance with Pentair Technical Products Return Policy. Warranty period for repaired goods remains at 1 year from shipment of original goods. Pentair Technical Products sole obligation to Buyer under this warranty will be, at Pentair Technical Products option:

A. Repair or replace Pentair Technical Products products or parts found to be defective in material or workmanship.

B. Issue credit for the purchase price paid by Buyer relating to such defective Goods or part.

THIS WARRANTY CONSTITUTES THE ENTIRE WARRANTY WITH RESPECT TO THE GOODS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

RETURN AND REPAIR POLICY

Pentair Technical Products products that: (i) are made to order, (ii) have been modified by Buyer, (ii) have special finishes, or (iv) are determined by Pentair Technical Products to constitute "custom" products that cannot be returned to stock or resold to other Buyers, will not be accepted for return by Pentair Technical Products.

All returns require a Return Material Authorization number (RMA #), regardless of reason for return, whether it be for warranty or out of warranty repair. Returns without an RMA # will be refused by our Receiving Department. An RMA # is valid for 60 days.

A. An RMA # will be issued by our Repair Department in Anoka, MN at 866-545-5252. Buyer should have following information available at time of RMA request:

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1. Complete Model Number, Serial Number and description of damaged unit being returned.
2. Original Buyer Purchase Order number and date product was received by Buyer.
3. Quantity to be returned and a brief description of failure for each unit, if different.
4. Contact information of Buyer that must include: name of company, billing and shipping address, phone, number, fax number, freight carrier and the name and phone number of a Buyer contact who can elaborate on the claimed defect in detail.
5. Buyer must provide a Repair Purchase Order number for both warranty and out of warranty repairs. The PO will not exceed 50% of a new unit. Buyer will be notified of repair charges that exceed approved PO amount.

B. All returns to Pentair Technical Products must be securely packed, using original cartons if possible. All returns must have the RMA number visible on the outside of the carton. Pentair Technical Products is not responsible for material damaged in transit. Any refrigerant-bearing Goods must be shipped upright for return.

C. Shipping cost for all non-warranty repairs is the responsibility of the sender and must be shipped prepaid. Shipping costs for all warranty related repairs will be covered by Pentair Technical Products provided the goods are returned using a Pentair Technical Products approved carrier. If after diagnoses the product is determined by Pentair Technical Products not be covered under warranty, Buyer will be responsible for all shipping charges and will be billed accordingly.

D. Non-warranty repairs are subject to a $75 minimum analysis fee. Analysis fee will be waived if Buyer approves repair work. If approval is not received within 30 days, material will be scrapped and all shipping expenses and corresponding analysis fees will be billed to Buyer.

E. At Buyer's request, Failure Analysis can be provided by Pentair Technical Products for warrantable goods at no charge. Failure analysis for non-warranty repairs are subject to a $100 per hour Engineering charge plus any other incurred testing costs.

F. All returned merchandise must be sent to the following address: Pentair Technical Products, 2100 Hoffman Way, Anoka, MN 55303-1745.

G. Credit for accepted returns shall be at the original selling price or the current selling price, whichever is lower, less the restocking charge indicated as follows:

1. Within 60 days of invoice date - 20% of applicable selling price.
2. Within 61-120 days of invoice date - 30% of applicable selling price.
3. Within 121-180 days of invoice date - 40% of applicable selling price.
4. Beyond 180 days - subject to individual review by Pentair Technical Products.

If product being returned for credit requires repair or modification, the cost of any labor or material necessary to bring product into saleable condition will be deducted from credit. Buyer may not take credit against returns without prior written Pentair Technical Products approval.

LIMITATION OF LIABILITY

PENTAIR TECHNICAL PRODUCTS WILL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LOST PROFITS OR LABOR COSTS, ARISING FROM THE SALE, USE OR INSTALLATION OF THE GOODS, FROM THE GOODS BEING INCORPORATED INTO OR BECOMING A COMPONENT OF ANOTHER PRODUCT, FROM ANY BREACH OF THIS AGREEMENT OR FROM ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON WARRANTY (EXPRESSED OR IMPLIED) OR OTHERWISE BASED ON CONTRACT, OR ON TORT OR OTHER THEORY OF LIABILITY, AND REGARDLESS OF ANY ADVICE OR REPRESENTATIONS THAT MAY HAVE BEEN RENDERED BY PENTAIR TECHNICAL PRODUCTS CONCERNING THE SALE, USE OR INSTALLATION OF THE GOODS

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